includes the delicate network of connectives between the efferent and afferent branches. On the rectal side of the lung are numerous efferent and afferent vessels, uniform in size and finely branched; while on the cardiac side, in addition to some small, short tributaries, are four strongly marked and much-branched veins. The posterior of these veins, which unites with the great pulmonary vein a little anterior to the junction of the latter with the auricle, is much the largest; it divides into two prominent branches, each with numerous lesser tributaries. The afferent vessels in this area are correspondingly large and much branched.

EXPLANATION OF PLATE XX.

Fig. 1. } Buccal mass, &c.
Fig. 2. }
Fig. 3. } Teeth.
Fig. 4. }
Fig. 5. Generative organs.
Fig. 6. Pallial organs.

LETTERING.

alb.g. Albumen-gland.
af.v. Afferent pulmonary vessels.
ef.v. Efferent pulmonary veins.
h.g. Hermaphrodite gland.
h.d. Hermaphrodite duct.
k. Kidney.
l.l. Left mantle lobe.
œs. Œsophagus.
p. Penis.
p.v. Great pulmonary vein.
per. Pericardium.
r. Rectum.
r.m. Retractor muscle.
r.s. Receptaculum seminis.
r.l. Right mantle lobe.
s.d. Salivary ducts.
s.g. Salivary gland.
u. Ureter.
vd. Vas deferens.

Art. XXXVIII.—*Notes on New Zealand* Mollusca, *with Descriptions of New Species and Subspecies.*

By Henry Suter.

Communicated by A. Hamilton.

[*Read before the Wellington Philosophical Society, 4th October*, 1905.]

Plate XVIII.

Meleagrina radiata, Lamarck (1836).

Lamarck, Anim. s. vert., 2nd ed., vol. vii, 1836, p. 107.

Specimens of this shell were found at the Kermadec Islands by Captain J. Bollons, and I am indebted to Professor W. H. Dall, of Washington, for their identification.

Pecten imparvicostatus, Bavay (1905).

Pecten australis, Hutton, Journ. de Conch., vol. xxvi, 1878, p. 54; Man. N.Z. Moll., 1880, p. 171 (not of Sowerby). *Pecten asperrimus*, Hutton, Proc. Linn. Soc. N.S.W., vol. ix., 1884, p. 531 (not of Lamarck); Suter, Trans. N.Z. Inst., vol. xxxiv, 1902, p. 223; Index Faunæ N.Z., 1904, p. 93 (not of Lamarck). *Pecten imparvicostatus*, A. Bavay, Journ. de Conch., vol. liii, 1905, p. 23, pl. ii, figs. 6, 7.

Hab. Novæ-Zelandiæ mare. Collected by Dr. Gall, of H.M.S. "Archeron" (Bavay): Cape Maria van Diemen; Hauraki Gulf; Nelson; Foveaux Strait; Chatham Islands.

Type in the British Museum.

This species is the *Pecten asperrimus* of New Zealand conchologists. According to Bavay it stands nearest to *P. aktinos* (= *bednalli*, Tate), and also shows some affinity with *P. bifrons*, Lamk. (= *tasmanicus*, Ad. and Ang.) and *P. lividus*, Lamk. (= *tegula*, Wood).

P. gemmulatus, Reeve, is in my opinion an intermediate form between *P. zelandiæ*, Gray, and *P. imparvicostatus*, Bavay. The upper valve shows more or less characters of *P. asperrimus*, Lamk., but the lower valve is very different, and it never attains the size of the latter.

Mytilus canaliculus, Martyn (1784).

Mytilus canaliculus, Martyn, Univ. Conch., vol. ii, 1784, fig. 78. *Mytilus latus* (*novæ-zeelandiæ*), Chemnitz, Conch. Cab., vol. viii, 1785, p. 167, pl. lxxxiv, fig. 747.

As Chemnitz is not binomial in vol. viii, we have to use Martyn's name, which, moreover, has priority. Although his figure is said to be not very good, yet he states that the specimen came from New Zealand, and it is undoubtedly, as I am also assured by Mr. Hedley, the same species as Chemnitz's *M. latus*.

Cardita calyculata, Linné (1767).

Chama calyculata, Linné, Syst. Nat., 1767, p. 1138 (= *Cardita aviculina*, Lamarck, 1819; *C. excavata*, Deshayes, 1852; *C. tasmanica*, T.-Woods, 1876).

For full synonymy of the species see Pritchard and Gatliff, Proc. Roy. Soc. Victoria, vol. xvii (n. s.), 1904, p. 234.

Venericardia corbis, Philippi (1836).

Cardita corbis, Philippi, Enum. Moll. Siciliæ, vol. i, 1836, p. 55 (= *unidentata*, Basterot).

A Pliocene fossil of south Italy, found living in the Adriatic, Mediterranean, and off the Canaries, in deep water (552 fathoms, "Challenger" Exped.).

Specimens of this shell, kindly named by Professor W. H. Dall, were dredged off Little Barrier Island in about 20 fathoms by Mr. R. H. Shakespear. This forms a very interesting addition to the fauna of New Zealand.

Dosinia cœrulea, Reeve (1850)

Artemis cœrulea, Reeve, Conch. Icon., vol. vi, 1850, fig. 25.
Dosinia cœrulea, Pritchard and Gatliff, Proc. Roy. Soc. Victoria, vol. xvi (n. s.), 1903, p. 133.

The first valve I ever saw of this shell was obtained near Nelson. Later on a number of specimens, but all empty shells, were collected by Mr. A. Hamilton, Director of the Colonial Museum, and he very kindly gave me a few examples. These were kindly named by Professor W. H. Dall. I reproduce here the diagnosis given by Reeve :—

"The blue-tinged *Artemis* : Shell orbicular, convexly tumid in the middle, posteriorly slightly angled, thick, concentrically finely elevately striated, area of the ligament rather broadly excavated, lunule cordate, whitish, tinged with pink and blue towards the umbones.

"*Hab.* Raine's Island, Torres Strait (Captain Ince).

"A solid species in which the concentric striæ are not more prominent at the sides than elsewhere, whilst the delicate pink and blue colouring about the umbones is characteristic."

The specimens I have seen had lost the pink and blue colouring, being so-called "dead shells." The species also occurs at Port Phillip and Western Port, Victoria, but it seems to be a rather rare shell.

Tapes fabagella, Deshayes (1853).

For full reference see Pritchard and Gatliff, Proc. Roy. Soc. Victoria, vol. xvi (n. s.), 1903, p. 134.

This species has turned up in a gathering from Island Bay, Cook Strait, and has to be added again to the list of New Zealand *Mollusca* (Hedley, Records Austral. Museum, vol. v, 1904, p. 89).

Tellina angulata, Hutton (1885).

Hutton, Trans. N.Z. Inst., vol. xvii, 1885, p. 322 ; Pliocene Mollusca of N.Z., in Macleay Mem. Vol., 1903, p. 80, pl. ix., figs. 86, *a*, *b*.

Several valves of this shell were collected near Stewart Island, and two kindly given to me by Mr. A. Hamilton a good many years back. They are light-brown-coloured, but otherwise there is no difference between these recent valves and those from the Pliocene of Wanganui. There is a slight error

to correct in Captain Hutton's diagnosis—viz., the *posterior* cardinal of the right valve, and the *anterior* cardinal of the left valve, are *bifid*, as will be seen from the figure of the left valve (fig. 86*b*).

Mactra ordinaria, E. A. Smith (1898).

Mactra triangulare, Hector, Cat. Col. Museum N.Z., 1870, p. 173 (not of Lamarck). *M. elegans*, Hutton, Cat. Tert. Moll. N.Z., 1873, p. 19 (not of Sowerby, 1825).

In the "Pliocene *Mollusca* of New Zealand" Captain Hutton puts his *M. elegans* as a young form of *M. æquilateralis*, Desh. I compared specimens from the Pliocene of Wanganui with my co-types of Smith's species, and found them to agree in every detail.

Mactra lavata, Hutton (1885).

Index Faunæ N.Z., p. 90.

I have examined a specimen obtained by Mr. A. Hamilton at Petane, and gone over the description and figures in the "Pliocene *Mollusca* of New Zealand," and arrived at the conclusion that it is not a *Mactra*, but merely a young form of *Standella ovata*, Gray, of which it therefore should be considered a synonym.

Mesodesma australis, Gmelin (1792).

Mya novæ-zeelandiæ, Chemnitz, Conch. Cat., vol. vi, 1782, p. 30, pl. iii, figs. 19, 20. *Mya australis*, Gmelin, Syst. Nat., xiii, 1792, p. 3221.

Chemnitz being polynomial in vol. vi, the name used by Gmelin has to be adopted.

Corbula macilenta, Hutton (1873)

Corbula macilenta, Hutton, Cat. Tert. Moll. N.Z., 1873, p. 18. (?) *Corbula erythrodon*, Von Martens, Crit. List. Moll. N.Z., 1873, p. 41; Hutton, Journ. de Conch., vol. xxvi, 1878, p. 44; Man. N.Z. Moll., 1880, p. 135; Proc. Linn. Soc. N.S.W., vol. ix, 1884, p. 513; Pliocene Moll. N.Z., 1893, p. 74; Suter, Fauna Novæ-Zealand., 1904, p. 88 (not of Lamarck). *Corbula pura*, Webster, Trans. N.Z. Inst., vol. xxxvii, 1905, p. 279, pl. x, figs. 12, 12*a*.

The late Professor Von Martens was very doubtful about identifying our species with the Japanese *C. erythrodon*, Lamk. Mr. Hedley, in his paper on the *Pelecypoda* dredged in 110 fathoms off Great Barrier Island (this volume), points out that the New Zealand species hitherto known as *C. erythrodon* is very different from Lamarck's species, and that it should be

struck off the New Zealand list. Having now read Lamarck's diagnosis I fully agree with Mr. Hedley, and as Hutton's name *macilenta* is available it has to take the place of *erythrodon*. Webster's *C. pura* I do not consider as a distinct species; the radiate striation is more or less distinct in all specimens of *C. macilenta* that came under my observation, and its greater predominance, together with more regular concentric striation, can hardly be considered as sufficient reason why it should be regarded as a species different from *macilenta*. Unfortunately, the Rev. Mr. Webster took the anterior for the posterior margin, and the right for the left valve in consequence.

Chiton huttoni, n. sp. Plate XVIII, figs. 1–6.

General Appearance.—Shell oblong-ovate, angularly raised, valves striated throughout, jugum smooth, girdle with rounded scales; colour yellowish-olive, dull to dark green or brick-red; interior whitish.

The flatly convex anterior valve has seventeen to twenty-four subequal riblets reaching to the apex, and broken up by concentric rugæ of growth; sometimes a few riblets are interspersed which do not extend to the apex; the latter is smooth, and mostly a little excavated posteriorly.

The intermediate valves have the jugum smooth, projecting a little behind; the pleural tracts have about twenty to twenty-five furrows on each side, which near the central area are narrow and not deep, but usually widening and deepening on approaching the margin. Sometimes they are in breadth equal to the riblets, but in some specimens they are narrower. They extend the whole length of the pleural areas. The lateral areas are strongly ribbed, the ribs broken up by the continuance of the grooves on the pleural tracts. Their number is very variable—the usual number is three to four, but sometimes as many as five are found—and some of them may be divaricating, which, however, is not the rule.

The posterior valve has the mucro very little behind the middle; the central area is flatly convex, with the same furrows as the pleural tracts of the intermediate valves; the posterior slope is concave, and the posterior area has eighteen to twenty strongly granose riblets reaching up to the apex.

The girdle bears roundish medium-sized and compactly imbricating polished scales, which under a powerful lens show faint striation.

The colour is very variable; the most common is yellowish-olive, then dull-green is met with, and one of these specimens has the end valves blackish-green; one specimen is brownish-black, and one brick-red. The girdle has the same colour as

the valves; sometimes dark bands of variable width and irregular in distribution may be seen.

The interior is mostly bluish-white, pinkish-white in the red specimen. The sinus is deep and narrow, pectinate. The slits on a specimen I disarticulated are: head-valve 9, intermediate valves 1–1, posterior valve 15. All teeth are blunt and pectinate; those of the tail-valve are very unequal in breadth. The valve-callus is rather prominent.

Divergence, 115°. Length, 34 mm.; breadth, 20 mm.

Hab.—Near Dunedin; collected by Mr. A. Hamilton, now Director of the Colonial Museum, who kindly gave me a few specimens many years back.

Type in my collection.

Remarks.—It is at the special request of Miss M. K. Mestayer, of Wellington, that this mollusc is named in honour of Captain Hutton, F.R.S., &c., in acknowledgment of his continuous very kind help she had the honour to enjoy in her conchological studies. Miss Mestayer found a number of years back a *Chiton* at Lyall Bay, which Captain Hutton and myself then thought to be a new species, and lately Miss Mestayer kindly lent me the specimen for description, under condition that it should bear Captain Hutton's name, to which I, of course, with greatest pleasure agreed. However, on closely examining the specimen I found it to be a red-coloured mutatio of *Chiton æreus*, Reeve, one of our rare species. I am very glad indeed to have, nevertheless, an opportunity to comply with Miss Mestayer's wish and unite the name of our honoured leader in natural history with the species.

I once sent a specimen to Mr. E. R. Sykes in London, asking him to be good enough and compare it with the type of Reeve's *æreus* in the British Museum. He, with his usual kindness, however, informed me that it was not the supposed species, but seemed to agree with a specimen in the British Museum from New Caledonia which bears the manuscript name *perpunctatus*, Cpr. I do not doubt for a moment that the well-known great ability of Mr. Sykes, but, considering that the affinities of the marine *Mollusca* of New Caledonia and New Zealand are very slender, and having no material from the former country for comparison, I thought it advisable not to take up that manuscript name There may be differences between the two species which a short examination would not reveal.

Chiton huttoni is in its sculpture nearest allied to *C. canaliculatus*, Q. and G., *C. æreus*, Reeve, *C. limans*, Sykes, and *C. stangeri*, Reeve; but the diagnosis and figures now given will easily help to separate it from the other species. I have not seen it yet from any other locality.

Helcioniscus mestayeræ, n. sp. Plate XVIII, figs. 7–9.

Shell solid, oval, slightly narrower in front, depressed-conical; apex at about the front fourth, sharply pointed. Surface sculptured with numerous (about fifty) broad depressed radiating ribs which are crossed by fine concentric striæ. Colour dark-olive with rather distant indistinct bluish-grey radiating bands.

Interior bluish-grey, with a silvery lustre. There are at irregular intervals about eleven broad radiating areas with chestnut-coloured spots and patches, sometimes arranged in a divaricating pattern; between these areas are several radiating bands of an alternately darker and lighter grey colour. These characters are very distinctly visible when the shell is held up against the light, and give it a very beautiful appearance. The central callus is well defined; its colour is reddish-orange, lighter near the margin, finely and minutely dotted with yellow. The muscle-scar is about 3 mm. broad, but slightly impressed.

Length, 49 mm.; breadth, 39 mm.; altitude, 14 mm.

Hab.—Stewart Island.

Type in Miss Marjorie K. Mestayer's cabinet.

I have great pleasure in naming this beautiful species in honour of our most enthusiastic conchologist, Miss M. K. Mestayer.

The animal is unknown. It is quite distinct from any New Zealand species of *Helcioniscus* I have seen, but the general characters approach those of *H. radians*, Gm., more than of any other species.

Haliotis australis, Gmelin (1792).

Haliotis rugoso-plicata, Chemnitz, Conch. Cab., vol. x, 1788, p. 311, fig. 1604. *Haliotis australis*, Gmelin, Syst. Nat., xiii, 1792, p. 3689.

The above-quoted volume of Chemnitz being polynomial, the name given to the species by Gmelin should be used.

Haliotis virginea, Gmelin (1792).

For the same reason, Gmelin instead of Chemnitz should be recognised as author of the species. For both data I am indebted to Mr. Hedley.

Fissurella huttoni, nom. mut.

Fissurella squamosa, Hutton, Cat. Mar. Moll. N.Z., 1873, p. 42.

The specific name *squamosa* being preoccupied by Deshayes, I propose to name the only New Zealand species of the genus in honour of Captain F. W. Hutton, F.R.S., &c. The type is in the Colonial Museum.

Turbo shandi, Hutton (1873).

I had an opportunity of examining Captain Hutton's type specimens in the Colonial Museum, and I found them to be undoubted young specimens of *Turbo granosus*, Martyn.

Turbo helicinus, Born., subsp. tricostata, Hutton.

Turbo smaragdus, Martyn, var. *tricostatus*, Hutton, Proc. Linn. Soc. N.S.W., vol. ix, 1884, p. 355. *Turbo* (*Lunella*) *radina*, Webster, Trans. N.Z. Inst., vol. xxxvii, 1905, p. 277, pl. ix, figs. 1–1*b*.

The nealogic stage of this subspecies had hitherto escaped the notice of conchologists, but this beautifully sculptured shell has now been described and figured by the Rev. Mr. Webster under the name of *T. radina*. It is to be regretted that Webster bestowed a new specific name on this little shell, as further investigation with ample material at hand would have shown him that the form is not adult and not new at all. The larger shells of *T. helicinus* and its subspecies have, as a rule, the first four or five whorls so much eroded that nothing whatever of the neanic sculpture can be discovered; but I have specimens in my collection which show quite unmistakably the peculiar sculpture of the young shell, especially the spiniform projections on the suture. I collected a few specimens of *T. radina* at Takapuna having a diameter from 2·5–5 mm., and these I used for comparison with larger shells. In specimens with about four whorls there is still a perforation left, but with further growth the umbilicus is perfectly sealed up. On examples from the Hauraki Gulf the ribs very soon disappear, the whorls becoming quite smooth, but on shells collected in Lyttelton Harbour the ribs persist on specimens of about 25–30 mm. diameter. I am of opinion that further investigation will show that all young shells of *T. helicinus* are tricostate. The subgenus *Lunella*, Bolten, 1798, used by Webster should be replaced by *Marmorostoma*, Swainson, 1840, as most conchologists reject the names proposed by Bolten.

Trochus (s. str.) conus, Gmelin (1792)

Syn. *T. acutangulus*, Chemnitz (not binomial); *T. elatus*, Lamarck.

A very young specimen of this to me unknown shell was found a few years ago by the lighthouse-keeper of Cape Maria van Diemen, and kindly presented to me. As usual in such cases, there was no literature and no comprehensive collection at my disposal, and I again availed myself of Professor W. H. Dall's

great kindness for identifying the specimen. The species is said to occur at the Philippine Islands, and its turning up on the northern shore of New Zealand is rather surprising.

Nerita melanotragus, E. A. Smith (1884).

There has been much confusion about the names bestowed upon the common black Nerite of Australasia. Some years ago I asked Professor Von Martens about his opinion on the subject, and he told me that Gray was the first to use the Latin name *nigra* for our shell, and as he indicated its native country there would be no doubt about the species, and *N. nigra*, Gray, should be used. I accepted Von Martens's opinion, but last year, when I had the pleasure of Mr. Hedley's visit, we discussed the subject, and he strongly advocated the no-doubt-correct view that the same name should be used for the New Zealand shell as for that of Australia and Tasmania. To finally settle the point I wrote to Professor W. H. Dall, asking him which name he would recommend to be used. With the usual great courtesy the following reply was sent to me: "I think I should use *melanotragus*. The species of Quoy and Gaimard, *Nérite noirâtre*, which Gray (in Dieffenbach) latinized as *Nerita nigra*, and identified with the New Zealand shell, according to Von Martens, was of unknown locality, and might not really be the same as Dieffenbach's shell. There is some little doubt about the identity as well as the sufficiency of the diagnosis, and I think I should prefer the name about which no doubt exists. Then there is an earlier *Nerita nigra* (Dillwyn, 1817, following Chemnitz, vol. v. p. 2015), perhaps a variety of *N. bifasciata*, Gm., which would seem to preoccupy the name." This opinion is perfectly in harmony with that expressed by Hedley (Proc. Linn. Soc. N.S.W., 1900, pp. 500–2). For the synonymy of the species see Pritchard and Gatliff, Proc. Roy. Soc. Victoria, vol. xiv (n. s.), 1902, p. 95.

Eulima treadwelli, Hutton (1893).

Eulima micans, Hutton, Trans. N.Z. Inst., vol. xvii, 1885, p. 318 (not of T.-Woods). *Eulima treadwelli*, Hutton, Pliocene Moll. N.Z., in Macleay Mem. Vol., 1893, p. 55, pl. vii, fig. 42.

Recent specimens were collected near Stewart Island, and some kindly given to me by Mr. A. Hamilton. The smaller specimens have six whorls and a length of 4 mm., as mentioned in Hutton's diagnosis, but two are considerably larger, one having seven, the other eight, whorls, the latter measuring 2 mm. by 6 mm.

Ianthina ianthina, Linné (1758).

Mr. Hedley kindly informed me that Linné bestowed the above name on the species commonly known as *I. fragilis*, Lamarck, 1801, and, having priority, should be used instead.

Astralium sulcatum, Martyn, subsp. davisii, Stowe.

Imperator davisii, Stowe, Trans. N.Z. Inst., vol. iv, 1872, p. 218. *Risella kielmannsegi*, Zelebor, Verhandl. Zool. Bot. Gesellsch. Wien, vol. xvi, 1866, p. 913; Reise der "Novara," Moll., pl. i, fig. 11; Hutton, Cat. Mar. Moll. N.Z., 1873, p. 28; Martens, Crit. List Moll. N.Z., 1873, p. 28. *Risella aurata*, Hutton, Journ. de Conch., vol. xxvi, 1878, p. 27. *Risella melanostoma*, Hutton, Man. N.Z. Moll., 1880, p. 79; Suter, Trans. N.Z. Inst., vol. xxxiv, 1902, p. 215; Index Faunæ N.Z., 1904, p. 79. *Astralium pyramidale*, Webster, Trans. N.Z. Inst., vol. xxxvii, 1905, p. 276, pl. ix, figs. 2, 2*a*.

The prevailing tendency amongst conchologists to collect only, as far as possible, adult specimens has led to the neglect of the study of earlier stages of many of our shells. There is no doubt that some of these young forms show characters which in the adult are often more or less obliterated by corrugation, &c. Two instances are already mentioned in this paper —viz., *Turbo shandi* and *Turbo radina*. The specimen described by Zelebor was no doubt obtained in Auckland Harbour; examples were also collected by Mr. T. F. Cheeseman, Rev. Mr. Webster, and myself at Takapuna, but apparently all dead shells. As far as I know the genus *Risella* is littoral, and it puzzled me for a considerable time why our species should not be found alive at Takapuna. The shells I found appeared to be young forms only. Through the kindness of Mr. W. L. May I got a number of Tasmanian young specimens of *Risella melanostoma*, and on comparing these with our supposed *Risella* of the same size I found the two decidedly distinct; also, the *R. kielmannsegi* recalls the habitus of *R. melanostoma*, as was already pointed out by Zelebor. Some time back I found at Takapuna and Narrow Neck young live shells of *Astralium sulcatum*, subsp. *davisii*, and comparing these with the specimens of *R. kielmannsegi* I found them to perfectly agree. Whenever a specimen with the calcareous operculum was found it was thrown away again, every conchologist recognising at once that it was only a young *Astralium*, and they were never carefully compared with the dead shells of the supposed *Risella*.

The genus *Risella* has therefore to be omitted from the list of New Zealand *Mollusca*. The Pliocene *R. melanostoma*, however, is undoubtedly that species, now extinct in New Zealand.

Analthea hexagona, n. sp.

Hipponyx cornucopiæ, Hutton, Cat. Mar. Moll. N.Z., 1873, p. 32 (not of Lamarck). *Hipponyx australis*, Hutton, Journ. de Conch., vol. xxvi, 1878, p. 30; Man. N.Z. Moll., 1880, p. 88; Proc. Linn. Soc. N.S.W., vol. ix, 1884, p. 939 (not of Lamarck).

This species differs from *H. australis*, Lamk., in the more or less distinct hexagonal, rarely pentagonal, outline of the aperture. The interior has a light-green central area, which is cinereous or brown in *australis*, and the margin is light-purple. The radiate riblets, similar to those of *australis*, are mostly visible only on young specimens; adult shells are strongly corroded, but incremental lines are sometimes visible. The greatest diameter of the aperture of my largest specimen is 22 mm.; the altitude is extremely variable.

Hab.—A rock in Tauranga Harbour, and Chatham Islands. Type in my collection.

Calyptræa novæ-zeelandiæ, Lesson (1830).

Crepidula (*Sigapatella*) *novæ-zeelandiæ*, Lesson, Voy. de la "Coquille," Zool., vol. ii, 1830, p. 395. *Calyptræa maculata*, Quoy and Gaimard, Voy. Astrol., Zool., vol. iii, 1835, p. 422, pl. lxxii, figs. 6–9.

The name of Quoy and Gaimard being used by the majority of conchologists made me quite forget that Lesson's name has priority. Although his diagnosis was not accompanied by a figure it is quite sufficient to identify the species.

Calyptræa (Calyptropsis) alta, Hutton (1885).

Trochita alta, Hutton, Trans. N.Z. Inst., vol. xvii, 1885, p. 329. *Calyptræa alta*, Hutton, Pliocene Moll. N.Z., in Macleay Mem. Vol., 1893, p. 62, pl. vii, figs. 59, *a*, *b*.

There are three convex rapidly increasing whorls, ornamented with well-marked rugose growth-lines; colour light-brown; aperture rotundate-oval; septum sinuated near the false columella; the interior whitish-brown, light-brown radiate bands are sometimes to be found on the septum; subperforate, only a small chink being left. Diameter: maximum, 32 mm.; minimum, 29 mm. Altitude, 23 mm.

It will be seen that the recent specimens are larger than the fossil ones (25 mm. by 16 mm.).

Hab.—A number of specimens, mostly with broken septum, were collected by Mr. McGahey, former lighthouse-keeper at Cape Maria van Diemen, and most obligingly presented to me.

Rissoa zosterophila, Webster (1905).

Rissoia (*Sabanæa*) *annulata*, Suter, Proc. Mal. Soc., vol. iii, 1898, p. 63; Index Faunæ N.Z., 1904, p. 77 (not of Hutton). *Rissoia zosterophila*, Webster, Trans. N.Z. Inst., vol. xxxvii, 1905, p. 277, pl. ix. figs. 5, *a*, *b*.

I remember that many years back when I began taking an interest in marine shells I found a small *Rissoa* in Lyttelton Harbour, which I took for Hutton's *R. annulata*, misled by the pale band below the suture. Through the kindness of Professor Chilton, Acting Curator of the Canterbury Museum, I have now been able to see the type of *Rissoia annulata*, which is simply a variety of *Rissoina olivacea*, Hutton. Everybody who has had to do with these minute shells knows how easy it is to make a mistake if specimens are not actually compared. I am much indebted to the Rev. Mr. Webster for clearing up this error.

Rissoina (Eatoniella) limbata, Hutton (1883).

Cingula limbata, Hutton, N.Z. Journ. Sci., vol. i, 1883, p. 477; Trans. N.Z. Inst., vol. xvi, 1884, p. 214. *Rissoa limbata*, Hutton, Proc. Linn. Soc. N.S.W., vol. ix, 1884, p. 941; Tryon, Man. Conch. (1), vol. ix, 1887, p. 355, pl. lxxi, fig. 98. *Phasianella limbata*, Suter, Proc. Mal. Soc., vol. iii, 1898, p. 8; Index Faunæ N.Z., 1904, p. 8. *Rissoina* (*Eatoniella*) *limbata*, Webster, Trans. N.Z. Inst., vol. xxxvii, 1905, p. 278, pl. x, figs. 8, 8*a* (dentit., operc.).

Type, from Auckland, in the Canterbury Museum.

It is very fortunate that the operculum and dentition of this species were examined by Webster, and the generic position settled beyond a doubt. When I transferred the species to *Phasianella* I had only a single specimen, obtained near Sumner, which had the operculum deep in the aperture fixed on the animal, and I did not try to extract it. I examined the specimen again and found the operculum white and having a calcareous appearance. The same peculiarity I observed in Auckland specimens, but on extracting the operculum all the white colour had disappeared, and it was horny, with a claviform process as figured by Webster. There is no doubt that I was misled by the whitish tissue of the animal showing through the semitransparent operculum.

Turritella carlottæ, Watson (1880).

Turritella carlottæ, Watson, Journ. Linn. Soc., Zool., vol. xv, 1880, p. 222; "Challenger" Reports, vol. xv, Gastropoda,

p. 478, pl. xxx, fig. 5. *Turritella vittata*, Hutton, Cat. Mar. Moll. N.Z., 1873, p. 29 (not of Lamarck, used for a fossil shell).

Hutton's name being preoccupied, Watson's name is available. In my opinion the two represent the same species.

Vermicularia (Stephopoma) nucleogranosa, Verco (1904).

Stephopoma nucleogranosum, Verco, Trans. Roy. Soc. South Australia, vol. xxviii, 1904, p. 143, pl. xxvi, figs. 11–13.

About two years ago I found this species at Takapuna on the under-side of boulders between tide-marks. On examining it I found it to be a new species, and put it aside for future description. My specimens quite agree with Dr. Verco's excellent description and figures. The setæ of the operculum show a very great variability, and they are quite distinct from the symmetrically built setæ of *V.* (*Stephopoma*) *rosea*, Q. and G.

Planaxis mollis, Sowerby (1823).

Buccinum brasilianum, Lamarck, Anim. s. vert., vol. vii, 1822, p. 272. *Planaxis mollis*, Sowerby, Genera, part xii, 1823. *Planaxis brasilianus*, Hedley, Proc. Linn. Soc. N.S.W., 1904, p. 186.

Mr. Hedley has shown that Lamarck's name, though a misnomer, has priority over that of Sowerby. In my opinion it is not in the interest of science to adopt a name distinctly proved to be a misnomer, and to substitute it for a name accepted by most conchologists.

Tritonium costatum, Born (1780).

Murex costatus, Born, Test. Mus. Cæs. Vindob., 1780, p. 297.

This is the species commonly known as *T. olearium*, L. Hanley has, however, shown that Linné's *Murex olearium*, L., is the same as *Ranella gigantea*, Lamarck. (For full list of references see "Challenger" Report, vol. xv, Gastropoda, p. 390.)

Tutufa (Crossata) californica, Hinds (1844).

Ranella californica, Hinds, Voy. "Sulphur," 1844, p. 12, pl. ii, figs. 4, 5 (= *thersites*, Redfield).

A specimen of this Californian species was found at the Kermadecs, and is in the Auckland Museum. The whole surface of the shell is covered by a white coating of nulliporites. I compared it with a specimen from California, and was unable to separate the two. This is another Kermadec puzzle

Columbella inconstans, nom. mut.

Columbella varians, Hutton, Trans. N.Z. Inst., vol. xvii, 1885, p. 314, pl. xvii, fig. 2; Pliocene Moll. N.Z., in Macleay Mem. Vol., 1893, p. 44, pl. vi, fig. 16 (not of Sowerby, 1832). *Surcula varians*, Suter, Trans. N.Z. Inst., vol. xxxi, 1899, p. 69; Index Faunæ N.Z., 1904, p. 71.

Feeling somewhat doubtful about the correctness of my transferring this species to the genus *Surcula*, I sent some fossil specimens to Mr. M. Cossmann, asking him to be good enough and give me his opinion on the subject. He very kindly informed me that Captain Hutton had no doubt correctly classified the shell. I was misled by the shallow sinus on the outer lip below the suture. The specific name applied to it by Captain Hutton being preoccupied, I now propose the above.

Columbella pseutes, nom. mut. Plate XVIII, fig. 10.

Obeliscus roseus, Hutton, Cat. Mar. Moll. N.Z., 1873, p. 22; Journ. de Conch., vol. xxvi, 1878, p. 24; Man. N.Z. Moll., 1880, p. 72; Proc. Linn. Soc. N.S.W., vol. ix, 1884, p. 935. *Pyramidella rosea*, Suter, Trans. N.Z. Inst., vol. xxxiv, 1902, p. 214; Index Faunæ N.Z., 1904, p. 74.

When examining the type specimens in the Colonial Museum I found the columella smooth, no plications being present; the species therefore does not belong to the genus *Pyramidella* (= *Obeliscus*), and its proper place is no doubt under *Columbella*. The specific name being preoccupied in that genus, I suggest the name *pseutes* (the deceiver). The figure is from a type specimen.

The type specimens are from Stewart Island. Examples I found in the Auckland Harbour are purplish-black with a white band.

Cominella maculosa, Martyn (1784).

Buccinum testudineum, Chemnitz, Conch. Cat., vol. x, 1788, p. 187, pl. clii, fig. 1454. *Buccinum maculosum*, Martyn, Univ. Conch., vol. i, 1784, fig. 8.

The name of Chemnitz having to be abandoned as being polynomial, I consulted Mr. Hedley, who is always ready to assist us New Zealand conchologists, as to the name to be adopted. He very kindly sent me tracings of *B. testudineum* and *B. maculosum*, suggesting that both represented one and the same species, and that in consequence Martyn's name could be used. The figures, though representing shells of different size, show the same main characters, and the diagnoses do not point to two different species. I compared specimens from seven localities in New Zealand, and I must confirm Mr. Hedley's view as correct.

Following Captain Hutton's latest publication on the genus, the more ponderous shells with a cinereous columella, as they occur from Cook Strait down to Banks Peninsula, were taken as *C. maculosa*, Mart., but the difference from the Auckland shells, taken for *C. testudinea*, is so slight that they cannot be kept apart as two species. Moreover, the dentition is the same in the two, as will be seen on examining the figures given by Captain Hutton in Trans. N.Z. Inst., vol. xv, pl. xviii, figs. M, N. In fig. M the lateral teeth are turned over, the outer denticles laying over the rhachidian tooth.

Cominella costata, Quoy and Gaimard (1833).

Buccinum costatum, Quoy and Gaimard, Voy. Astrol., Zool., vol. ii, p. 417, 1833, pl. xxx, figs. 17–20. *B. eburneum*, Reeve, Conch. Icon., pl. xii, fig. 93, 1846. *B. angasi*, Crosse, Journ. de Conch., 1864, p. 275, pl. xi, fig. 5.

Two years ago Mr. E. A. Smith, I.S.O., of the British Museum, sent me a specimen which he told me came from New Zealand. I found it to perfectly agree with Quoy and Gaimard's diagnoses and figures, as well as with specimens in my collection from Tasmania, and it has to be added to the list of New Zealand shells.

Cominella zealandica, Reeve (1846).

Buccinum zealandicum, Reeve, Conch. Icon., sp. 28, 1846. *Cominella zealandica*, Tryon, Man. Conch. (1), vol. iii, p. 183, pl. lxxix, fig. 384.

This species is considered as a synonym of *C. maculata*, Mart., by Captain Hutton in his Révision des Coq. de la N.-Zélande, 1878, and in Man. N.Z. Moll., but omitted, as not really inhabiting New Zealand, in the "Revision of the Rhachiglossate Mollusca," 1884.

Tryon says, "This species never came from the locality assigned to it; it is a true *Buccinum*, and may be a form of *undatum*, having accidentally deepened colour upon the superior revolving lines; or, if the colour is normal, then it is probably a var. of *B. cyanum*, Brug."

My attention was first drawn to this species by a Pliocene shell from Waikopiro, which agrees perfectly (the colouring, of course, excepted) with Reeve's diagnosis and figure. I also have a recent specimen from New Zealand, yellowish, the revolving lines between the ribs brown-tinted, in my collection.

This species and *C. costata* are nearly allied to the Australian *C. lineolata*, Lamarck, and may have been the cause for including the latter species in our fauna. However, I have never found or seen a New Zealand specimen of *C. lineolata*, and we may safely omit it from the list of New Zealand molluscs.

Nassa zonalis, A. Adams (1852).

Proc. Zool. Soc., 1851, p. 107 (publ. 1852).

Specimens were collected at the Kermadec Islands by Miss Robison, of Christchurch, and I am again indebted to Professor W. H. Dall for naming them. They are much worn, and it may well be that these, and perhaps several other species that have been found washed up on the beach, were carried down on seaweeds by currents from a northerly direction. It seems most desirable that one or several good collectors should stay at the Kermadecs for several months and thoroughly investigate the interesting fauna of that group, including dredging. For the present all we can do is to put on record all the species found in the locality, leaving it to future workers to weed out the species not really living in the group. Dead specimens of *Conus* and *Cypræa* have also been found at the Kermadecs.

Purpura striata, Martyn, n. subsp. bollonsi.

This subspecies may shortly be described as a *P. striata* in which the revolving cinguli are cut up by more or less deep longitudinal sulci into distinct nodules, thus producing the sculpture of *P. emarginata*, Desh. The colour of the shell and interior of mouth is white, and the outer lip is strongly denticulated. These two latter characters distinguish it from *emarginata*, which, if really found in New Zealand, may be a form of *P. squamata*, Hutton.

Hab.—This very pretty subspecies was collected by Captain Bollons, of the "Hinemoa," at the Kermadec Islands. Captain Bollons is well known as a most enthusiastic collector, doing all in his power to further the interests of science, and I propose to name the subspecies in his honour.

Type in my collection.

Marginella albescens, Hutton (1873).

Marginella albescens, Hutton, Cat. Mar. Moll. N.Z., 1873, p. 19; Journ. de Conch., vol. xxvi, 1878, p. 22; Man. N.Z. Moll., 1880, p. 62. *M. infans*, Hutton, Trans. N.Z. Inst., vol. xvi, 1884, p. 224 (not of Reeve).

Hutton's name originally given to the species has to be adopted again, as our shell is not the same as Reeve's *infans*, which occurs near Singapore. No doubt Captain Hutton followed Tryon in identifying his species with that of Reeve. Further, *M. pellucida*, T.-Woods, is not a synonym of *infans* or *albescens* either.

Ancilla rubiginosa, Swainson (1840).

Ancilla rubiginosa, Swainson, Zool. Illustr., vol. ii, 1840, pl. iv; Tryon, Man. Conch. (1), vol. v, p. 94, pl. xxxvii, fig. 25, pl. xxxviii, figs. 26, 27.

A. mammilata, Hinds, and *A. albo-callosa*, Lischke, are synonyms. Specimens I collected near Timaru and Sumner were kindly named by Professor W. H. Dall. My largest specimen has an altitude of 30 mm. According to Tryon the habitat of the species includes Japan, China, Malacca, and Madagascar.

Ancilla lata, Hutton (1885).

Ancillaria lata, Hutton, Trans. N.Z. Inst., vol. xvii, 1885, p. 325; Pliocene Moll. N.Z., in Macleay Mem. Vol., 1893, p. 44, pl. vi, fig. 15.

Specimens were found in the Manukau Harbour by Mr. C. Spencer and the Rev. Mr. Webster, and I also not unfrequently came across the species in the Hauraki Gulf. The specimens from the latter locality exactly correspond with a small form found in the Pliocene near Waikopiro

Terebra venosa, Hinds (1844)

Terebra venosa, Hinds, Proc. Zool. Soc., 1843, p. 157 (publ. 1844). *T. penicillata*, var. *venosa*, Tryon, Man. Conch. (1), vol. vii, p. 13, pl. xi, figs. 12, 13.

Specimens were also collected by Miss Robison at the Kermadecs, and kindly identified by Professor W. H. Dall (not by myself, as stated by the Rev. Mr. Webster). Tryon gives as habitat—Seychelles, Mauritius.

Daphnella cancellata, Hutton (1878).

D. cancellata, Hutton, Journ. de Conch., vol. xxvi, 1878, p. 18; Man. N.Z. Moll., 1880, p. 45. *D. lymneiformis*, Hutton, Proc. Linn. Soc. N.S.W., vol. x, 1885, p. 118; Suter, Trans. N.Z. Inst., vol. xxxiv, 1902, p. 211; Index Faunæ N.Z., 1904, p. 71 (not of Kiener).

I have never seen *D. lymneiformis*, Kiener, but Mr. Hedley informs me that our shell is not Kiener's species, and we have therefore to fall back on Hutton's name.

Hab.—The type is from Auckland. I have also specimens from Stewart Island, which are much smaller—length, 7·5 mm.

Type in the Otago Museum, Dunedin.

Polypus campbelli, E. A. Smith (1902).

"Report on the Collections of Natural History made in the Antarctic Regions during the Voyage of the 'Southern Cross,'" 1902, vii, Mollusca, by Edgar A. Smith, F.Z.S., p. 201, pl. xxiv, figs. 7–11.

The specimen described is a male. Mr. Smith mentions that the right dorsal arm is shorter than the left, probably bitten by a fish or crustacean. I have a female specimen, also from Campbell Island, which shows the very same peculiarity, and proves that it is not accidental, but must be considered as characteristic of the species.

EXPLANATION OF PLATE XVIII.

Fig. 1. *Chiton huttoni*, Suter. Natural size.
Figs. 2–4. ,, ,, Head, median, and tail valves; enlarged.
Fig. 5. ,, ,, Side view of tail-valve: enlarged.
Fig. 6. ,, ,, Girdle-scales, much magnified.
Figs. 7–9. *Helcioniscus mestayerœ*, Suter. Natural size.
Fig. 10. *Columbella pseutes*, Suter. Photo from type.

Art. XXXIX.—*Genus* Isidora: *Correction of Article XVI. in Last Year's Transactions* (*Volume XXXVII*).

By Henry Suter.

[Plate XIX.

Through an unfortunate mistake the figures of *Isidora* species in the text are inversed, representing dextral instead of sinistral shells. The editor, Mr. A. Hamilton, very kindly consented to have them reprinted, showing the correct sinistral volution of the whorls.

EXPLANATION OF PLATE XIX.

Fig. 1. *Isidora tabulata*, Gould.
Fig. 2. ,, ,, ,, subsp. *moesta*, H. Adams.
Fig. 3. ,, *hochstetteri*, Dunker.
Fig. 4. ,, *novæ-zelandiæ*, Sowerby.
Fig. 5. ,, *antipodea*, Sowerby.
Fig. 6. ,, *lirata*, Tenison-Woods.
Figs. 7, 8. ,, ,, ,, subsp. *conferta*, Suter.